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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/820,588	04/08/2004	Floyd A. Edwards	M-649	8122
30757 7590 12/11/2007 BANNER & WITCOFF, LTD ATTORNEYS FOR CLIENT NO. 006780 10 SOUTH WACKER DR. SUITE 3000 CHICAGO, IL 60606			EXAMINER ZUBAJLO, JENNIFER L	
			ART UNIT 2629	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/820,588

Applicant(s)

EDWARDS, FLOYD A.

Examiner

Jennifer Zubajlo

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10-16, 18 and 19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-16, 18 and 19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 November 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 13 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification as originally filed has failed to disclose applicant's newly claimed inventions "varying the first contrast setting to create a second contrast setting for the liquid crystal display based on the resistance of the potentiometer".

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 states: "A keyboard and display assembly of a printing device comprising: a liquid crystal display included on the printing device capable of displaying information on a plurality of lines; a processor located on the printing device, the processor controlling the information depicted on the display; a potentiometer; and a keyboard mounted on the printing device, the processor keyboard having a plurality of data entry keys coupled to the processor, the plurality of keys including: at least one key for controlling the contrast of the liquid crystal display in a set-up mode, the at least one key operatively coupled to the processor; and at least one contrast key for controlling the contrast of the liquid crystal display in a data entry mode, the contrast key directly coupled to the liquid crystal display by the potentiometer bypassing the processor." It is unclear how the plurality of keys coupled to the processor can include a key that bypasses the processor.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-8, 10-16, and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art in view of David G. Burnett (Patent Number: US 4,964,124), hereinafter Burnett.

As to claim 1, Applicant's Admitted Prior Art teaches: A keyboard and display assembly comprising: a liquid crystal display capable of displaying information on a plurality of lines; a processor controlling the information depicted on the display; and a keyboard having a plurality of keys coupled to the processor, the plurality of keys including: at least one contrast key for controlling the contrast of the liquid crystal display in a set-up mode, the at least one key operatively coupled to the processor (see [0004]).

Applicant's Admitted Prior Art does not teach a keyboard and display assembly of a printing device, a potentiometer or at least one contrast key for controlling the contrast of the liquid crystal display in a data entry mode, the contrast key directly coupled to the liquid crystal display by the potentiometer bypassing the processor.

Burnett teaches at least one contrast key for controlling the contrast of the liquid crystal display in a data entry mode, the contrast key directly coupled to the liquid crystal display by the potentiometer bypassing the processor (see figure 2 & 3B – elements 62 & 64). While Burnett does not specifically state what mode the contrast adjustment occurs in, it is obvious to one of ordinary skill in the art that by bypassing the processor and being directly connected to the LCD allows for the contrast to be adjusted independent of the processor and therefore can be adjusted in any mode including data entry mode.

None of the references directly teach a keyboard and display assembly of a printing device. Examiner is taking Official Notice. It is well known in the art to have a keyboard and display assembly for use on a printing device.

Therefore, it would have been obvious to one skill in the art at the time of the invention was made to have been motivated to incorporate the teaching of at least one contrast key for controlling the contrast of the liquid crystal display in a data entry mode, the contrast key directly coupled to the liquid crystal display by the potentiometer bypassing the processor taught by Burnett into a liquid crystal display capable of displaying information on a plurality of lines; a processor controlling the information depicted on the display; and a keyboard having a plurality of data entry keys coupled to the processor and at least one contrast key for controlling the contrast of the liquid crystal display taught by Applicant's Admitted Prior Art in order to create a user-friendly device that is easy to operate.

As to claim 3, none of these references directly teach a first contrast key for increasing the liquid crystal display's contrast and a second contrast key for decreasing the liquid crystal display's contrast, however, the number of keys used for adjusting the contrast is just an engineering choice of design.

As to claim 4, Burnett teaches the potentiometer changing its resistance in response to the contrast key being actuated (see figure 3B).

As to claim 5, Burnett teaches the potentiometer includes a digital potentiometer, the digital potentiometer directly coupling the contrast key to the liquid crystal display, the digital potentiometer changing its resistance in response to the contrast key being

pressed (see figure 3B). None of the references directly teach a digital potentiometer, however it would be obvious to use digital instead of analog.

As to claim 6, Applicant's Admitted Prior Art teaches a keyboard and display assembly comprising: a liquid crystal display capable of displaying information on a plurality of lines; a processor controlling the information depicted on the liquid crystal display; a keyboard having a plurality of keys, the plurality of keys including: at least one key for controlling the contrast of the liquid crystal display in a set-up mode, the at least one key operatively coupled to the processor (see [0004]).

Applicant's Admitted Prior Art does not teach a keyboard and display assembly mounted on a printer or at least one contrast control key for controlling the contrast of the liquid crystal display in a data entry mode, the at least one contrast key coupled to the liquid crystal display by a potentiometer such that the coupling of the contrast control key bypasses the processor.

Burnett teaches at least one contrast control key for controlling the contrast of the liquid crystal display in a data entry mode, the at least one contrast key coupled to the liquid crystal display by a potentiometer such that the coupling of the contrast control key bypasses the processor (see figure 2 and 3B – elements 62 & 64). While Burnett does not specifically state what mode the contrast adjustment occurs in, it is obvious to one of ordinary skill in the art that by bypassing the processor and being directly connected to the LCD allows for the contrast to be adjusted independent of the processor and therefore can be adjusted in any mode including data entry mode.

None of the references directly teach a keyboard and display assembly mounted on a printer. Examiner is taking Official Notice. It is well known in the art to have a keyboard and display assembly for use on a printing device.

Therefore, it would have been obvious to one skill in the art at the time of the invention was made to have been motivated to incorporate the teaching of at least one contrast key for controlling the contrast of the liquid crystal display in a data entry mode, the contrast key directly coupled to the liquid crystal display by the potentiometer bypassing the processor taught by Burnett into a liquid crystal display capable of displaying information on a plurality of lines; a processor controlling the information depicted on the display; and a keyboard having a plurality of data entry keys coupled to the processor and at least one contrast key for controlling the contrast of the liquid crystal display taught by Applicant's Admitted Prior Art in order to create a user-friendly device that is easy to operate.

As to claim 8, Burnett teaches the potentiometer is a digital potentiometer that changes its resistance in response to the contrast key being pressed (see figure 3B). None of the references directly teach a digital potentiometer, however it would be obvious to use digital instead of analog.

As to claim 10, Applicant's Admitted Prior Art teaches: A keyboard and display assembly comprising: a liquid crystal display capable of displaying information on at least five lines; a processor controlling the information depicted on the liquid crystal

display; and a keyboard having a plurality of keys, the plurality of keys including: at least one key for controlling the contrast of the liquid crystal display in a set-up mode, the at least one key operatively coupled to the processor (see [0004]).

Applicant's Admitted Prior Art does not teach a keyboard and display assembly for a barcode label printer or a first contrast control key coupled to the liquid crystal display by a potentiometer to increase the display's contrast in a data entry mode and a second contrast control key coupled to the liquid crystal display by the potentiometer to decrease the display's contrast in the data entry mode, wherein the first and second contrast control keys are coupled to the liquid crystal display bypassing the processor.

Burnett teaches contrast control coupled to the liquid crystal display bypassing the processor (see figures 2 & 3B – elements 62 & 64). While Burnett does not specifically state what mode the contrast adjustment occurs in, it is obvious to one of ordinary skill in the art that by bypassing the processor and being directly connected to the LCD allows for the contrast to be adjusted independent of the processor and therefore can be adjusted in any mode including data entry mode.

None of the references directly teach a keyboard and display assembly mounted on a barcode label printer. Examiner is taking Official Notice. It is well known in the art to have a keyboard and display assembly for use on a printing device.

None of the references directly teach the liquid crystal display capable of displaying information on at least five lines, however this is simply an engineering choice of design and Applicant's Admitted Prior Art teaches a multi-line liquid crystal display (see [0004]).

None of the references directly teach a first contrast key for increasing the liquid crystal display's contrast and a second contrast key for decreasing the liquid crystal display's contrast, however, the number of keys used for adjusting the contrast is just an engineering choice of design. It is also obvious to have 2 keys for contrast adjustment, 1 for up and 1 for down.

Therefore, it would have been obvious to one skill in the art at the time of the invention was made to have been motivated to incorporate the teaching of contrast control coupled to the liquid crystal display bypassing the processor taught by Burnett into a keyboard and display assembly comprising: a liquid crystal display capable of displaying information on at least five lines; a processor controlling the information depicted on the liquid crystal display; and a keyboard having a plurality of keys coupled to the processor taught by Applicant's Admitted Prior Art because this enables the user to adjust the contrast without having to exit data entry mode and enter set-up mode.

As to claims 2, 7, and 11, Applicant's Admitted Prior Art teaches a multi-line liquid crystal display (see [0004]).

Applicant's Admitted Prior Art does not specifically disclose that a liquid crystal display is capable of displaying information on five or seven lines. However, it would

have been obvious for Applicant Admitted Prior Art multi-line display to be capable of displaying information on at least five or seven lines depending on the display size. It would have also been an engineering choice of design depending upon individual choice of how many lines to leave on the display.

As to claim 12, none of the references directly teach the potentiometer is a digital potentiometer, however it would be obvious to use digital instead of analog. Also, none of the references directly teach a first and second contrast key, however the number of keys used for adjusting the contrast is just an engineering choice of design. It is also obvious to have 2 keys for contrast adjustment, 1 for up and 1 for down.

As to claim 13, Applicant's Admitted Prior Art teaches a method of changing contrast settings of a liquid crystal display having a processor and a keyboard, the method comprising; receiving at the processor a first contrast setting in a set-up mode for the liquid crystal display; displaying data on the liquid crystal display using the default contrast setting; receiving a keyboard input from the keyboard (see [0004]).

Applicant's Admitted Prior Art does not teach the received input bypassing the processor and varying the first contrast setting in a data entry mode to create a second contrast setting for the liquid crystal display based on the resistance of the potentiometer.

Burnett teaches the received input bypassing the processor and varying the first contrast setting in a data entry mode to create a second contrast setting for the liquid

crystal display based on the resistance of the potentiometer (see figure 2 and 3B – elements 62 & 64). While Burnett does not specifically state what mode the contrast adjustment occurs in, it is obvious to one of ordinary skill in the art that by bypassing the processor and being directly connected to the LCD allows for the contrast to be adjusted independent of the processor and therefore can be adjusted in any mode including data entry mode.

None of the references directly teach a keyboard and display assembly mounted on a barcode label printer. Examiner is taking Official Notice. It is well known in the art to have a keyboard and display assembly for use on a printing device.

None of the references directly teach a first contrast key for increasing the liquid crystal display's contrast and a second contrast key for decreasing the liquid crystal display's contrast, however, the number of keys used for adjusting the contrast is just an engineering choice of design. It is also obvious to have 2 keys for contrast adjustment, 1 for up and 1 for down.

Therefore, it would have been obvious to one skill in the art at the time of the invention was made to have been motivated to incorporate the teaching of received input bypassing the processor and varying the first contrast setting in a data entry mode to create a second contrast setting for the liquid crystal display based on the resistance of the potentiometer into a method of changing contrast settings of a liquid crystal display having a processor and a keyboard, the method comprising; receiving at the processor a first contrast setting in a set-up mode for the liquid crystal display; displaying data on the liquid crystal display using the default contrast setting; receiving a

keyboard input from the keyboard taught by Applicant's Admitted Prior Art in order to create a user-friendly device that is easy to operate.

As to claim 14, none of the references directly teach a default contrast setting, however it is obvious to one skilled in the art to have a default contrast setting.

As to claim 15, Burnett teaches the potentiometer includes a digital potentiometer (see figure 3B). None of the references directly teach a digital potentiometer, however it would be obvious to use digital instead of analog.

As to claim 16, Applicant's Admitted Prior Art teaches wherein a first contrast setting is received at the processor during a set-up mode of the barcode label printer (see [0004]). None of the references directly teach a keyboard and display assembly mounted on a barcode label printer. Examiner is taking Official Notice. It is well known in the art to have a keyboard and display assembly for use on a printing device.

As to claims 18 and 19, Burnett teaches a contrast control key to increase the resistance of the potentiometer and a contrast control key to decrease the resistance of the potentiometer (see figure 2 and 3B – elements 62 & 64). None of the references directly teach a first contrast key for increasing the liquid crystal display's contrast and a second contrast key for decreasing the liquid crystal display's contrast, however, the

number of keys used for adjusting the contrast is just an engineering choice of design. It is also obvious to have 2 keys for contrast adjustment, 1 for up and 1 for down.

Response to Arguments

7. Previous drawing and claim objections have been withdrawn due to the amended corrections by Applicant. Also, the previous 35 USC 112 rejection to "a processor located on the printing device/barcode label printer" has been withdrawn. However, the 35 USC 112 rejections to claims 13 and 17 still remain as described above. Nowhere in the specification as originally filed does it specifically state "creating a second contrast setting".

8. Applicant argues that "Because Burnett does not disclose the feature of changing the contrast through two distinct different ways in two distinct different modes of operation" and that "the cited references do not disclose the features of independent claims 1, 6, 10, and 13". However, the combination of Applicant's Admitted Art with Burnett teaches Applicant's claimed invention. Applicant's Admitted Prior Art teaches changing the contrast through the processor in set-up mode and Burnett teaches changing the contrast through the potentiometer directly to the liquid crystal display in any mode (see above rejection).

9. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the

references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the combination is made to create a user-friendly device that is easy to operate.

Applicant further argues that "Burnett merely references once in the Brief Description of the Preferred Embodiments "a potentiometer 64 is connected to the LCD module 62 to adjust the bias on the display for contrast." (column 6 lines 3-5). However, Burnett provides no further information regarding this feature, nor is there any other suggestion or motivation as to how this feature "enables the user to adjust the contrast without having to exit data entry mode and enter set-up mode."" While Burnett does not specifically state what mode the contrast adjustment occurs in, it is obvious to one of ordinary skill in the art that by bypassing the processor and being directly connected to the LCD allows for the contrast to be adjusted independent of the processor and therefore can be adjusted in any mode.

10. In response to applicant's argument that Burnett is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the teaching of the contrast adjustment coupled to the LCD by the potentiometer bypassing the processor is taken from Burnett and therefore is very pertinent to Applicant's main invention of adjusting the contrast in any mode by bypassing the processor.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patents 4,623,418 and 5,201,010 disclose potentiometers directly coupled to an LCD for contrast adjustment.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Zubajlo whose telephone number is (571) 270-1551. The examiner can normally be reached on Monday-Friday, 8 am - 5 pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on (571) 272-7674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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